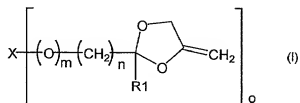


WHAT IS CLAIMED IS:

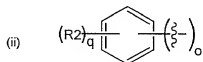
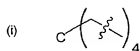
1. A 4-methylene-1,3-dioxolane compound of the general formula (I):



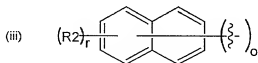
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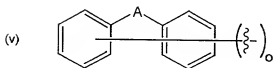
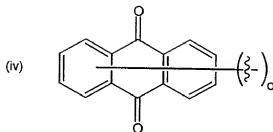
wherein R1 denotes hydrogen, C₅-C₆-cycloalkyl or C₁-C₄-alkyl; m and n, which may be the same or different, denote 0 or 1, wherein m ≤ n, o denotes 2, 3 or 4 depending on the valency of the group X; and X denotes a C-C single bond, straight-chain or branched C₁-C₁₈-alkylene, C₅-C₆-cycloalkylene, C₈-C₁₈-arylalkylene, -CH₂(OCH₂CH₂)_pOCH₂-, -CH₂(OCH(CH₃)CH₂)_pOCH₂-, wherein p is an integer from 0 to 100, or a group selected from

10



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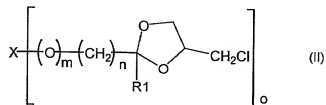


- wherein $q \leq (6-o)$, $r \leq (8-o)$, R2 denotes H or a C₁-C₄-alkyl group and A denotes a single bond or denotes -C(CH₃)₂-, -C(CF₃)₂-, -CH₂-, -SO₂- or -(C=O)-, and wherein the 2-position of the 1,3-dioxolane ring is not linked directly to an aromatic group.

2. The 4-methylene-1,3-dioxolane compound according to claim 1, selected from the group consisting of:
- 1,3-Bis-(4-methylene-1,3-dioxolane-2-yl)propane,
 - 1,2-bis-(2-methyl-4-methylene-1,3-dioxolane-2-yl)ethane,
 - 2,2'-bis-[4-methylene oxyphenyl-(4-methylene-1,3-dioxolane-2-yl)]propane,
 - bis-(4-methylene-1,3-dioxolane-2-yl)methane,
 - 1,5-bis-(4-methylene-1,3-dioxolane-2-yl)pentane,
 - 1,6-bis-(4-methylene-1,3-dioxolane-2-yl)hexane,
 - bis-(4-methylene-1,3-dioxolane-2-yl)methylether,

1,3-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]propane,
 tetrakis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]neopentane,
 5 1,4-bis-(4-methylene-1,3-dioxolane-2-yl)cyclohexane,
 1,2-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]ethane,
 2,2'-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]ethylether,
 10 1,4-bis-[(4-methylene-1,3-dioxolane-2-yl)ethenyl]-
 benzene,
 1,3-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]benzene,
 1,5-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 15 oxy]naphthalene,
 2,2-bis-[4-(4-methylene-1,3-dioxolane-2-yl)methylene
 oxyphenyl]propane,
 bis-[4-(4-methylene-1,3-dioxolane-2-yl)methylene
 oxyphenyl]methane,
 20 4,4'-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]biphenyl,
 2,6-bis-[(4-methylene-1,3-dioxolane-2-yl)methylene
 oxy]anthraquinone, and
 1,3,5-tris-[(4-methylene-1,3-dioxolane-2-yl)methylene
 25 oxy]benzene.

3. A 4-chloromethyl-1,3-dioxolane compound of the general formula (II):



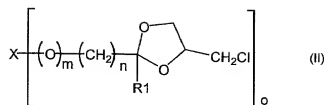
wherein R1, m, n, o and X have the same meanings as those
5 defined for general formula (I) in claim 1, respectively.

4. The 4-chloromethyl-1,3-dioxolane according to claim 3, selected from the group consisting of:

- 1,3-bis-(4-chloromethyl-1,3-dioxolane-2-yl)propane,
10 1,2-bis-(2-methyl-4-chloromethyl-1,3-dioxolane-2-yl)ethane,
2,2'-bis-[4-methylene oxyphenyl-(4-chloromethyl-1,3-dioxolane-2-yl)]propane,
bis-(4-chloromethyl-1,3-dioxolane-2-yl)methane,
15 1,5-bis-(4-chloromethyl-1,3-dioxolane-2-yl)pentane,
1,6-bis-(4-chloromethyl-1,3-dioxolane-2-yl)hexane,
bis-(4-chloromethyl-1,3-dioxolane-2-yl)methylether,
1,3-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene oxy]propane,
20 tetrakis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene oxy]neopentane,
1,4-bis-(4-chloromethyl-1,3-dioxolane-2-yl)cyclohexane,

1,2-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene
oxy]ethane,
2,2'-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methyl-
ene oxy]ethylether,
5 1,4-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)ethenyl]-
benzene,
1,3-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene
oxy]benzene,
1,5-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene
10 oxy]naphthalene,
2,2-bis-[4-(4-chloromethyl-1,3-dioxolane-2-yl)methyl-
ene oxyphenyl]propane,
bis-[4-(4-chloromethyl-1,3-dioxolane-2-yl)methylene
oxyphenyl]methane,
15 4,4'-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methyl-
ene oxy]biphenyl,
2,6-bis-[(4-chloromethyl-1,3-dioxolane-2-yl)methylene
oxy]anthraquinone, and
1,3,5-tris-[(4-chloromethyl-1,3-dioxolane-2-
20 yl)methylene oxy]benzene.

5. A process for the production of a 4-methylene-1,3-
dioxolane compound as recited in claim 1, comprising the
steps of:
25 treating a 4-chloromethyl-1,3-dioxolane compound of
the general formula (II):



wherein R1, m, n, o and X have the same meanings as those defined for general formula (I) in claim 1, respectively, with a base at a temperature from 0°C to 150°C to obtain a
 5 reaction product; and

isolating the reaction product in accordance with a *per se* known process.

6. The process according to claim 5, wherein it is
 10 implemented at a temperature from 15°C to 60°C.

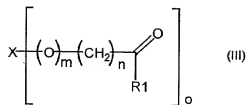
7. The process according to claim 5, wherein the treatment is implemented in the presence of a solvent.

8. The process according to claim 7, wherein the
 15 solvent is a good solvent for the base.

9. The process according to one of claims 5 to 8, wherein the base is potassium-*tert.*-butylate.

20 10. A process for the production of a 4-chloromethyl-1,3-dioxolane compound as recited in claim 3, comprising the steps of:

reacting a compound of the general formula (III):



wherein R₁, m, n, o and X have the same meanings as those defined for general formula (II) in claim 3, respectively,

5 with 3-chloro-1,2-propanediol; and

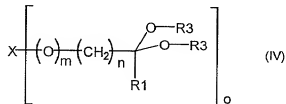
removing the resulting reaction water by distillation.

11. The process according to claim 10, wherein it is
10 carried out in the presence of a catalyst.

12. The process according to claim 10 or 11, wherein an entrainer is used.

15 13. A process for the production of a 4-chloromethyl-1,3-dioxolanes as recited in claim 3, comprising the steps of:

treating an acetal of the general formula (IV):



wherein R1, m, n, o and X have the same meanings as those defined for general formula (II) in claim 3, respectively, and R3 denotes a methyl or ethyl group, with 3-chloro-1,2-propanediol in the presence of an acidic catalyst at a temperature from 25°C to 150°C; and removing the resulting alcohol by distillation.

14. A composition capable of emission-free, photocationic cross-linking comprising at least one 4-methylene-1,3-dioxolane compound according to claim 1 and at least one photo-initiator.

15. The composition according to claim 14, wherein the photo-initiator comprises a triaryl sulfonium salt or a diaryl iodonium salt.

16. A transparent film obtained from a composition according to claim 14 or 15.